



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Total Maximum Daily Load Information Sheet

Little St. Francis River

Water Body ID: 2854

Water Body Segment at a Glance:

Counties:	St. Francois and Madison
Nearby City:	Fredericktown
Length:	32.4 miles
Pollutants:	Lead (in sediment)
Sources:	Catherine Lead Mine and Mine La Motte



State Map Showing Location of Watershed

Schedule for TMDL development:

TMDL development schedules are subject to change.

The most current schedule for TMDL development is available on the department's website at dnr.mo.gov/env/wpp/tmdl/wpc-tmdl-progress.htm

Description of the Problem

A water body is considered impaired when it fails to meet applicable water quality standards. Water quality standards consist of designated uses, water quality criteria, an antidegradation policy and implementation procedures. Little St. Francis River is impaired due to exceedances of state water quality criteria that protect aquatic life designated uses.

Designated uses of Center Creek*

- Warm Water Habitat (WWH)
- Cool Water Habitat (CLH)
- Whole Body Contact Recreation Category A (WBC-A)
- Secondary Contact Recreation (SCR)
- Human Health Protection (HHP)
- Irrigation (IRR)
- Livestock and Wildlife Protection (LWP)
- Drinking Water Supply (DWS)

*In addition to these specific uses, all waters of the state are protected by the general water quality criteria that are specified in the state's Water Quality Standards at 10 CSR 20-7.031(4).

Designated uses that are impaired

- Warm Water Habitat (WWH)
- General Criteria

Criteria that apply

- Missouri has no numeric criteria for metals in sediment. Likewise, federal guidelines have not yet been established for toxic chemicals in stream or lake sediments. In lieu of such criteria, Probable Effect Concentrations, or PECs, suggested by McDonald, et al.¹, are used to assess toxicity in stream sediments. PECs are the concentrations at which some toxic effect on aquatic life is likely.
- Missouri streams are also protected by the general criteria found at 10 CSR 20-7.031(4). The particular general criteria that apply to Little St. Francis River include:
 - (D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life.
 - (G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.

Water quality data and assessment

A stream is judged to be impaired due to lead in sediment, when the geometric mean of available lead sediment data exceeds the PEC by more than 150 percent. The PEC for lead in sediment is 128 mg/L. The geometric mean of all available lead in sediment data for Little Francis River is 447.6 mg/L, which is approximately 350 percent more than the PEC.

TMDL for Little St. Francis River

The Little St. Francis River TMDL will calculate the maximum amount of each listed pollutant that the stream can receive and still meet water quality standards. The TMDL will also identify all potential or suspected pollutant sources in the watershed and distribute the allowable pollutant loads among those various sources. When developed, the Little St. Francis River TMDL will use the most current and available data. For this reason, the final TMDL may present information that differs from that contained in this information sheet.

For more information call or write:

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¹ *Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems*, D. MacDonald, et al., 2000. USGS

Map of the Little St. Francis Watershed

